Center for
Health Statistics

California Department of Health Services

DIABETES DEATHS IN CALIFORNIA, 1999-2000

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DATA SUMMARY No. DS02-06001

This Data Summary is one of a series of leading cause of death reports.

Highlights

- **In 2000, 73.9% of all diabetes deaths in California occurred among people ages 65 and older.**
- **The diabetes crude death rate for California was 17.9 deaths per 100,000 population in 2000.**
- **During 2000, the California diabetes age-adjusted death rate of 20.6 was lower than the United States rate of 24.9.**
- **In 2000, Blacks had a diabetes age-adjusted death rate significantly higher than Whites, Hispanics, and Asian/Other.**

Introduction

In 1999, diabetes was the sixth leading cause of death in the United States and was the underlying cause of 68,399 deaths that year.[1] Currently, an estimated 10.3 million people in the United States have been diagnosed with diabetes and another 5.4 million people with diabetes remain undiagnosed.[2]

Diabetes disproportionately affects minority populations and the elderly and its incidence is likely to increase as minority populations grow and the U.S. population becomes older. The human suffering caused by diabetes and its complications is tragic, while the economic cost to society is great. Diabetes can have a harmful effect on most of the organ systems in the human body; it is a frequent cause of end-stage renal disease, non-traumatic lower-extremity amputation, and a leading cause of blindness among working age adults. Persons with diabetes are at increased risk for ischemic heart disease, neuropathy, and stroke.

The definition of diabetes used in this report is based on the ICD-10 codes E10-E14 currently presented in the National Center for Health Statistics (NCHS) *Monthly Vital Statistics Report*.[3] In this Data Summary, as in the previously mentioned NCHS report, diabetes related deaths are counted only when diabetes is the underlying cause of death. The United States Public Health Service has established a number of health objectives pertaining to diabetes, which are published in *Tracking Healthy People 2010*.[4] Since these objectives are based on both underlying and contributing causes of diabetes deaths rather than underlying cause only, California's progress in meeting the year 2000 national health objective for diabetes will not be addressed in this report. The Center for Health Statistics publication *Healthy California 2000: Midcourse Review*, is a reference for research related to the *Healthy People 2000* goals as they pertain to California.[5]

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[1] National Center for Health Statistics, Deaths: Final Data for 1999, *National Vital Statistics Reports*, DHHS Pub. No. (PHS) 2001-1120, PRS 01-0573, September 2001; Vol. 49, No. 8.

[2] Centers for Disease Control and Prevention. *Diabetes: A Serious Public Health Problem.* Atlanta, GA, U.S. Department of Health and Human Services, 2000.

[3] National Center for Health Statistics, Deaths: Preliminary Data for 1999, *National Vital Statistics Reports*, DHHS Pub. No. (PHS) 2001-1120, PRS 01-0358, June 2001; Vol. 49, No. 3.

[4] U.S. Department of Health and Human Services. *Tracking Healthy People 2010.* Washington DC: U.S. Government Printing Office, November 2000.

[5] Richards F. *Healthy California 2000: Midcourse Review, California's Experience in Achieving the National Health Promotion and Disease Prevention Objectives*. Center for Health Statistics, California Department of Health Services, June 1999.

A brief overview of data limitations and qualifications is provided at the end of this report.

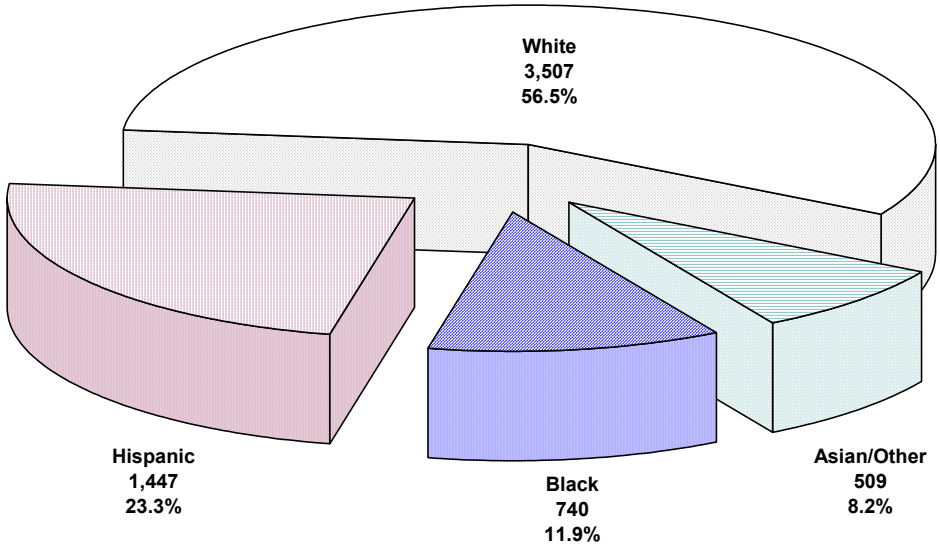
This report presents the most current data on diabetes deaths, and provides analysis of crude and age-adjusted death rates for California residents by sex, age, race/ethnicity, and county. This report contains data for the years 1999 and 2000, though its focus is on the 2000 data.

Diabetes Deaths

Table 1 (page 9) displays diabetes death data for 2000 by race/ethnicity, age, and sex. Diabetes deaths occur predominantly among the older population, and this held true in 2000 with 73.9 percent of all diabetes deaths involving people 65 years and older. This age group, within each respective race/ethnic group, accounted for 78.0 percent of all diabetes deaths among Whites, 75.8 percent of deaths among Asian/Other, 68.6 percent of deaths among Hispanics, and 63.6 percent of deaths among Blacks. During 2000, the number of deaths attributed to diabetes was slightly higher among females (3,188) than among males (3,015).

As shown in **Figure 1**, the number of diabetes deaths among Whites (3,507) was higher than Hispanics (1,447), Blacks (740), and Asian/Other (509).

FIGURE 1
DIABETES DEATHS
BY RACE/ETHNICITY
CALIFORNIA, 2000
(By Place of Residence)



Note : ICD-10 codes E10-E14.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
The race/ethnic groups in this chart were tabulated using the first listed race when certificates included more than one race.
Source: State of California, Department of Health Services, Death Records.

Table 2 (page 10) shows that the data for 1999 closely resembles the data for 2000 in both the overall numbers and their distribution among the race/ethnic groups and the sexes. Whites had the highest number of diabetes deaths (3,331). Hispanics were next highest (1,406), then Blacks (728), and Asian/Other (539). Females had a higher number of diabetes deaths (3,234) than males (2,770).

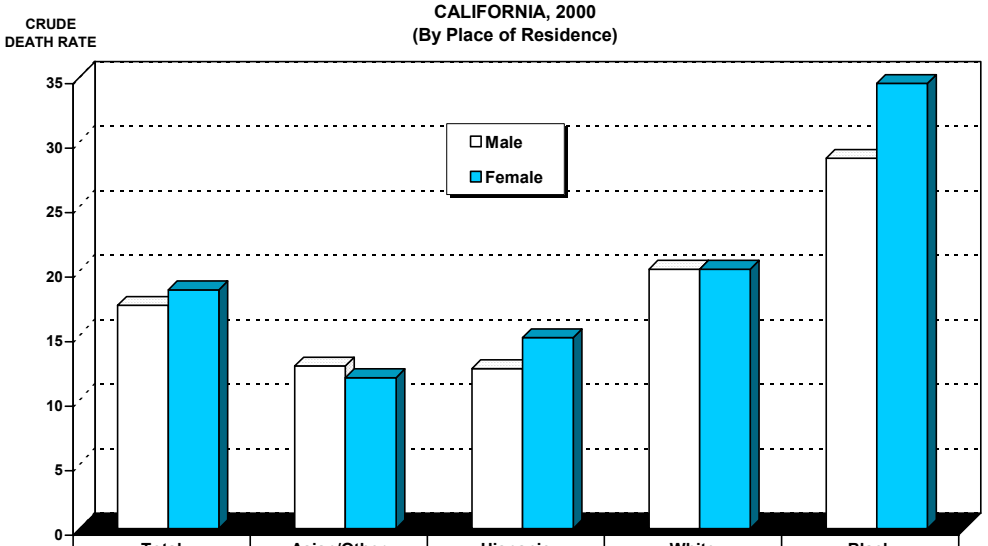
Diabetes Crude Death Rates

See Methodological Approach Section in this report for an explanation of crude and age-specific death rates.

The diabetes crude death rate for California increased slightly from 17.6 deaths per 100,000 population in 1999 to 17.9 in 2000. As shown in **Table 1** (page 9), Blacks had the highest crude death rate in 2000, a rate of 31.7. Whites were next with a crude rate of 20.1, followed by Hispanics with a rate of 13.5 and Asian/Other with a rate of 12.1. Two of these four rates increased slightly from 1999 (**Table 2**, page 10) when Blacks had a diabetes crude death rate of 31.4 and Whites had a rate of 19.2. The rates for Hispanics and Asian/Other decreased slightly from 1999, when the rates were 13.6 and 13.3 respectively. None of these changes from 1999 to 2000 were statistically significant.

Figure 2 shows Black and Hispanic females had higher diabetes crude death rates than males in the corresponding race/ethnic groups. Black females had a rate of 34.5 deaths per 100,000 population, and Black males had a rate of 28.7. Hispanic females had a rate of 14.8 and Hispanic males had a rate of 12.4. These differences were statistically significant. Contrary to the findings for the other two race/ethnic groups, White males and females had the same death rate and Asian/Other males had a slightly higher rate than Asian/Other females, although this difference was not statistically significant.

FIGURE 2
DIABETES CRUDE DEATH RATES
BY RACE/ETHNICITY AND SEX
CALIFORNIA, 2000
(By Place of Residence)



	Total	Asian/Other	Hispanic	White	Black
Male	17.3	12.6	12.4	20.1	28.7
Female	18.5	11.7	14.8	20.1	34.5

Note : Rates are per 100,000 population. ICD-10 codes E10-E14.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
The race/ethnic groups in this chart were tabulated using the first listed race when certificates included more than one race.
Source: State of California, Department of Finance; 2000 Population: Population Projections by Age, Race/Ethnicity and Sex, December 1998.
State of California, Department of Health Services, Death Records.

Diabetes Age-Specific Death Rates

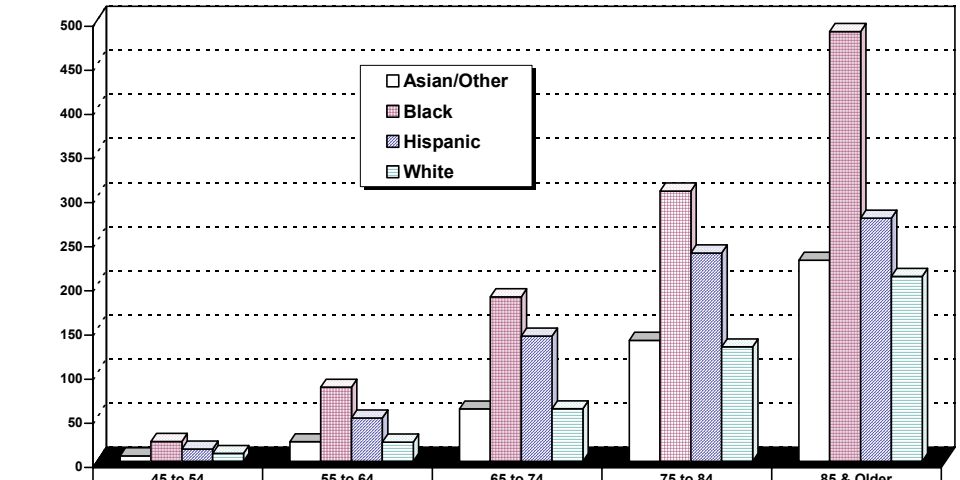
In **Table 1** (page 9), reliable age-specific rates show that among the sexes in 2000, Hispanic males consistently had higher diabetes death rates than Hispanic females. This was also true among Whites where males consistently had higher rates than females. Asian/Other males had higher rates than Asian/Other females in every age group except 85 and Older. Among Blacks, males had higher rates in the 45 to 54, 55 to 64, 75 to 84,

See the Vital Statistics Query System (VSQ) at our web site http://www.dhs.ca.gov/hisp/Applications/vsq/vsq.cfm to create your own vital statistics tables.

and 85 and Older age groups. Black females had higher rates in the 35 to 44 and 65 to 74 age groups.

Figure 3 shows that in 2000, among the age groups with reliable rates, Blacks had higher diabetes age-specific death rates than the other three race/ethnic groups. These differences were statistically significant.

FIGURE 3
DIABETES AGE-SPECIFIC DEATH RATES
BY RACE/ETHNICITY AND AGE
CALIFORNIA, 2000
(By Place of Residence)



	45 to 54	55 to 64	65 to 74	75 to 84	85 & Older
Asian/Other	6.4	22.3	59.4	137.2	228.0
Black	22.6	84.2	186.5	306.4	487.2
Hispanic	14.0	49.2	142.0	236.2	275.7
White	9.0	21.9	59.7	129.8	209.7

Note : Rates are per 100,000 population. ICD-10 codes E10-E14.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
The race/ethnic groups in this chart were tabulated using the first listed race when certificates included more than one race.
Source: State of California, Department of Finance; 2000 Population: Population Projections by Age, Race/Ethnicity and Sex, December 1998.
State of California, Department of Health Services, Death Records.

Not shown in **Figure 3**, but displayed in **Table 1** (page 9)**,** are the diabetes age-specific death rates for the 35 to 44 age group where Blacks had the highest rate, and Hispanics and Whites had lower rates. The rate for Asian/Other was unreliable for this age group. Whites had the only reliable rate in the 25 to 34 age group.

In **Table 2** (page 10) reliable age-specific rates show that among the sexes in 1999, White males and Asian/Other males consistently had higher rates than females in their respective race/ethnic groups. This sex ratio was variable among the other two race/ethnic groups. Black females had higher rates than Black males in the 45 to 54, 65 to 74, and 85 and Older age groups, and Hispanic females had higher rates than Hispanic males in the 55 to 64, 65 to 74, and 75 to 84 age groups.

Also displayed in **Table 2** (page 10)**,** the data for 1999 show that Blacks had higher diabetes death rates than the other three race/ethnic groups except in the 25 to 34 age group where Whites had the only reliable rate.

Diabetes Age-Adjusted Death Rates

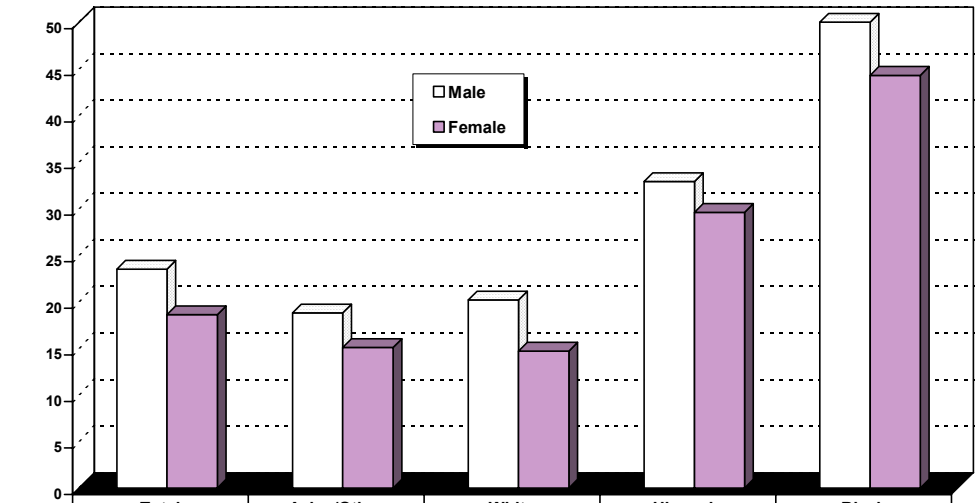
For more data, see DHS Center for Health Statistics, Home Page at http://www.dhs.ca.gov/org/hisp/chs/chsindex.htm

In 2000, the United States diabetes age-adjusted death rate (24.9 per 100,000 population) was higher than the California rate (20.6).[6]

Displayed in **Table 1** (page 9), a comparison among the race/ethnic groups shows that, in 2000, Blacks had an age-adjusted death rate (46.5) significantly higher than Hispanics (31.1), Whites (17.0), and Asian/Other (16.8). As shown in **Table 2** (page 10), the data among the four race/ethnic groups is very similar for 1999. Blacks had an age-adjusted death rate (47.2) significantly higher than Hispanics (31.8), Asian/Other (19.0), and Whites (16.4).

As shown in **Figure 4**, in 2000 the diabetes age-adjusted death rate for males was higher than for females in all four of the race/ethnic groups. Black males (50.0) had a higher rate than Black females (44.3). This pattern was the same for Hispanic males (32.9) and females (29.6), White males (20.2) and females (14.7), and Asian/Other males (18.8) and females (15.1). The differences were statistically significant among Whites and Asian/Other but not among Blacks or Hispanics.

FIGURE 4
DIABETES AGE-ADJUSTED DEATH RATES
BY RACE/ETHNICITY AND SEX
CALIFORNIA, 2000
(By Place of Residence)



	Total	Asian/Other	White	Hispanic	Black
Male	23.5	18.8	20.2	32.9	50.0
Female	18.6	15.1	14.7	29.6	44.3

Note : Rates are per 100,000 population. ICD-10 codes E10-E14.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
The race/ethnic groups in this chart were tabulated using the first listed race when certificates included more than one race.
Source: State of California, Department of Finance; 2000 Population: Population Projections by Age, Race/Ethnicity and Sex, December 1998.
State of California, Department of Health Services, Death Records.

Table 2 (page 10) displays similar data for 1999, where Black males had a higher diabetes age-adjusted death rate (47.5) than Black females (46.6). This was also true among Asian/Other males (20.0) and females (18.2), and White males (18.9) and females (14.7). Hispanics were the only race/ethnic group that did not follow this trend;

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[6] National Center for Health Statistics, Deaths: Preliminary Data for 2000, *National Vital Statistics Reports*, DHHS Pub. No. (PHS) 2001-1120, PRS 01-0599, October 2001; Vol. 49, No. 12.

You can read more about crude and age-adjusted rates on the National Center for Health Statistics web site at http://www.cdc.gov/nchs

Hispanic females (32.2) had a higher age-adjusted death rate than Hispanic males (31.4). Among each of these four race/ethnic groups the only significant difference was between White males and females.

Diabetes Death Data for California Counties

Table 3 (page 11) displays the number of deaths, crude death rates, and age-adjusted death rates by county averaged over a two-year period, 1999 to 2000. This averaging is done to reduce the large fluctuations in the death rates that are inherent among counties with a small number of events and/or population.

The highest average number of diabetes deaths occurred in Los Angeles County (1,849.5) and the lowest in Alpine County (0.0).

The highest reliable crude death rate was in Tehama County (37.6 deaths per 100,000 population), the lowest in Marin County (10.1).

Table 3 (page 11) displays diabetes age-adjusted death rates where Kings County had the highest reliable rate (48.1 per 100,000 population), and Marin County had the lowest (9.8).

Diabetes Death Data by Local City Health Jurisdiction

Table 4 displays the number of deaths and crude death rates for California's three local city health jurisdictions averaged over a two-year period, 1999 to 2000. Age-adjusted death rates were not calculated for the local health jurisdictions because city population estimates by age are not available.

TABLE 4
DIABETES DEATHS
AMONG THE LOCAL CITY HEALTH JURISDICTIONS
CALIFORNIA, 1999-2000
(By Place of Residence)

LOCAL HEALTH JURISDICTION	NUMBER OF DEATHS (Average)	1999 POPULATION	CRUDE DEATH RATE
BERKELEY	14.0	103,600	13.5 *
LONG BEACH	83.5	460,100	18.1
PASADENA	30.5	134,500	22.7

Note: Rates are per 100,000 population. Data is ICD-10 codes E10-E14.
The race/ethnic groups in this table were tabulated using the first listed race when certificates included more than one race.
* Death rate unreliable, relative standard error is greater than or equal to 23%.

Source: State of California, Department of Finance, Report E-4,
1999 Historical Estimates of California Cities and Counties, September 2001.
State of California, Department of Health Services, Death records.

The city of Long Beach had an average of 83.5 diabetes deaths, Pasadena had 30.5 diabetes deaths, and Berkeley had 14.0 diabetes deaths.

Pasadena had a diabetes crude death rate of 22.7 deaths per 100,000 population, Long Beach had a crude rate of 18.1, and Berkeley had a crude rate of 13.5, though the rate for Berkeley was not reliable.

Methodological Approach

The methods used to analyze vital statistics data are important. Analyzing only the number of deaths has its disadvantages and can be misleading because the population at risk is not taken into consideration. Crude death rates show the actual rate of dying in a given population, but because of the differing age compositions of various populations, they do not provide a statistically valid method for comparing geographic areas and/or multiple reporting periods. Age-specific death rates are the number of deaths per 100,000 population in a specific age group and are used along with standard population proportions to develop a weighted average rate. This rate is referred to as an age-adjusted death rate and removes the effect of different age structures of the populations whose rates are being compared. Age-adjusted death rates therefore provide the preferred method for comparisons of different race/ethnic groups, sexes, and geographic areas, and for measuring death rates over time. The year 2000 United States population is used as the basis for age-adjustments in this report.

Data Limitations and Qualifications

The diabetes death data presented in this report are based on vital statistics records with ICD-10 codes E10-E14 as defined by the National Center for Health Statistics.[3]

The term “significant” within the text indicates statistically significant based on the difference between two independent rates ($p<.05$).

As with any vital statistics data, caution needs to be exercised when analyzing small numbers, including the rates derived from them. Death rates calculated from a small number of deaths and/or population tend to be unreliable and subject to significant variation from one year to the next. To assist the reader, 95 percent confidence intervals are provided in the data tables as a tool for measuring the reliability of the death rates. Rates with a relative standard error (coefficient of variation) greater than or equal to 23 percent are indicated with an asterisk (*).

Beginning in 1999, cause of death is reported using the 10th Revision of the *International Classification of Diseases* (ICD-10).[7] Cause of death for 1979 through 1998 was coded using the 9th Revision of the *International Classification of Diseases* (ICD-9). Depending on the specific cause of death, the number of deaths and death rate are not comparable between ICD-9 and ICD-10. Therefore, our analyses involve only ICD-9 data (1979-1998) on prior reports and only ICD-10 data for this report (1999-2000), and do not combine both ICD-9 and ICD-10 data.

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[7] World Health Organization. International Statistical Classification of Diseases and Related Health Problems. Tenth Revision. Geneva: World Health Organization. 1992.

Some of the earlier reports on this subject are available online.

The variability of the rates has increased in Tables 3 and 4 because of the unavailability of earlier years of data. Three-year average numbers using ICD-10 coding for cause of death will reduce this problem when the 2001 data are available later in 2002.

The four race/ethnic groups presented in the tables are mutually exclusive. White, Black, and Asian/Other exclude Hispanic ethnicity, while Hispanic includes any race/ethnic group. In order to remain consistent with the population data obtained from the Department of Finance, the "White race/ethnic group" includes: White, Other (specified), Not Stated, and Unknown; and the "Asian/Other race/ethnic group" includes: Aleut, American Indian, Asian Indian, Asian (specified/unspecified), Cambodian, Chinese, Eskimo, Filipino, Guamanian, Hawaiian, Japanese, Korean, Laotian, Other Pacific Islander, Samoan, Thai, and Vietnamese. In addition, caution should be exercised in the interpretation of mortality data by race/ethnicity. Misclassification of race/ethnicity on the death certificate may contribute to underestimates of Hispanic and Asian/Other death rates.[8]

Beginning in 2000, federal race/ethnicity reporting guidelines changed to allow the reporting of up to three races on death certificates. The race/ethnic groups in this report were tabulated based on the first listed race on those certificates where more than one race was listed. Race groups for 2000 are therefore not strictly compatible with prior years and trends should be viewed with caution.

Effective with 1999 mortality data, the standard population for calculating age-adjustments was changed from the 1940 population standard to the year 2000 population standard in accordance with new statistical policy implemented by the National Center for Health Statistics. The new population standard affects measurement of mortality trends and group comparisons. Of particular note are the effects on race comparison of mortality.[3] Age-adjusted rates presented in this report are not comparable to rates calculated with different population standards.

In addition, the population data used to calculate the crude rates in Table 4 differ from the population data used to calculate the crude rates in Table 3. Consequently, caution should be exercised when comparing the crude rates among the three local city health jurisdictions with the rates among the 58 California counties. Age-adjusted rates for local city health jurisdictions were not calculated.

For a more complete explanation of the age-adjusting methodology used in this report see the *Healthy People 2000 Statistical Notes* publication.[9] Detailed information on data quality and limitations are presented in the appendix of the annual report, *Vital Statistics of California*.[10] Formulas used to calculate death rates are included in the technical notes of the *County Health Status Profiles* report.[11]

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[8] Rosenberg HM, et al. Quality of Death Rates by Race and Hispanic Origin: A Summary of Current Research, 1999. *Vital and Health Statistics, Series 2 No.128,* National Center for Health Statistics, DHHS Pub. No. (PHS) 99-1328, September 1999.

[9] Curtin LR, Klein RJ. Direct Standardization (Age-Adjusted Death Rates), *Healthy People 2000 Statistical Notes*, Number 6 – Revised, National Center for Health Statistics, DHHS Pub. No. (PHS) 95-1237, March 1995.

[10] Riedmiller K, Bindra K. *Vital Statistics of California, 1998*. Center for Health Statistics, California Department of Health Services, April 2001.

[11] Schmidt C. *County Health Status Profiles 2002*. Center for Health Statistics, California Department of Health Services, April 2002.

Diabetes Reports from Prior Periods

Cox D. Diabetes Deaths, California 1997-1998. *Data Summary.* Center for Health Statistics, California Department of Health Services, Report Register No. DS00-10000, October 2000.

Cox D. Diabetes Deaths, California, 1980-1996. *Data Summary.* Center for Health Statistics, California Department of Health Services, Report Register No. DS98-09000, September 1998.

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TABLE 1
DIABETES DEATHS
BY RACE/ETHNICITY, AGE, AND SEX
CALIFORNIA, 2000
(By Place of Residence)

AGE GROUPS	DEATHS			POPULATION			RATES			95% CONFIDENCE LIMITS					
										TOTAL		MALE		FEMALE	
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER
TOTAL															
Under 1	1	1	0	556,635	284,653	271,982	0.2 *	0.4 *	0.0 +	0.0	0.5	0.0	1.0	-	-
1 to 4	1	1	0	2,225,385	1,138,537	1,086,848	0.0 *	0.1 *	0.0 +	0.0	0.1	0.0	0.3	-	-
5 to 14	4	3	1	5,567,090	2,851,540	2,715,550	0.1 *	0.1 *	0.0 *	0.0	0.1	0.0	0.2	0.0	0.1
15 to 24	14	10	4	4,615,641	2,395,832	2,219,809	0.3 *	0.4 *	0.2 *	0.1	0.5	0.2	0.7	0.0	0.4
25 to 34	55	36	19	4,998,216	2,643,192	2,355,024	1.1	1.4	0.8 *	0.8	1.4	0.9	1.8	0.4	1.2
35 to 44	217	127	90	5,751,694	2,942,371	2,809,323	3.8	4.3	3.2	3.3	4.3	3.6	5.1	2.5	3.9
45 to 54	475	269	206	4,469,059	2,221,466	2,247,593	10.6	12.1	9.2	9.7	11.6	10.7	13.6	7.9	10.4
55 to 64	849	442	407	2,756,954	1,343,573	1,413,381	30.8	32.9	28.8	28.7	32.9	29.8	36.0	26.0	31.6
65 to 74	1,566	774	792	1,957,505	901,472	1,056,033	80.0	85.9	75.0	76.0	84.0	79.8	91.9	69.8	80.2
75 to 84	1,982	964	1,018	1,305,454	533,995	771,459	151.8	180.5	132.0	145.1	158.5	169.1	191.9	123.9	140.1
85 & Older	1,038	387	651	449,762	142,364	307,398	230.8	271.8	211.8	216.7	244.8	244.8	298.9	195.5	228.0
Unknown	1	1	0												
Total	6,203	3,015	3,188	34,653,395	17,398,995	17,254,400	17.9	17.3	18.5	17.5	18.3	16.7	17.9	17.8	19.1
Age-Adjusted							20.6	23.5	18.6	20.1	21.1	22.6	24.3	17.9	19.2
ASIAN/OTHER															
Under 1	0	0	0	67,434	34,501	32,933	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	266,651	136,640	130,011	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	660,070	339,469	320,601	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	0	0	0	604,654	309,566	295,088	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 to 34	3	3	0	649,462	328,916	320,546	0.5 *	0.9 *	0.0 +	0.0	1.0	0.0	1.9	-	-
35 to 44	13	9	4	698,724	339,157	359,567	1.9 *	2.7 *	1.1 *	0.8	2.9	0.9	4.4	0.0	2.2
45 to 54	36	24	12	561,189	265,710	295,479	6.4	9.0	4.1 *	4.3	8.5	5.4	12.6	1.8	6.4
55 to 64	71	40	31	317,872	151,006	166,866	22.3	26.5	18.6	17.1	27.5	18.3	34.7	12.0	25.1
65 to 74	129	72	57	217,081	95,695	121,386	59.4	75.2	47.0	49.2	69.7	57.9	92.6	34.8	59.1
75 to 84	170	79	91	123,907	53,227	70,680	137.2	148.4	128.7	116.6	157.8	115.7	181.2	102.3	155.2
85 & Older	87	33	54	38,153	16,296	21,857	228.0	202.5	247.1	180.1	275.9	133.4	271.6	181.2	313.0
Unknown	0	0	0												
Total	509	260	249	4,205,197	2,070,183	2,135,014	12.1	12.6	11.7	11.1	13.2	11.0	14.1	10.2	13.1
Age-Adjusted							16.8	18.8	15.1	15.3	18.3	16.5	21.2	13.2	16.9
BLACK															
Under 1	0	0	0	37,159	19,020	18,139	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	147,839	75,557	72,282	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	414,580	210,046	204,534	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	4	2	2	356,933	188,930	168,003	1.1 *	1.1 *	1.2 *	0.0	2.2	0.0	2.5	0.0	2.8
25 to 34	14	10	4	352,200	185,909	166,291	4.0 *	5.4 *	2.4 *	1.9	6.1	2.0	8.7	0.0	4.8
35 to 44	44	21	23	388,391	189,399	198,992	11.3	11.1	11.6	8.0	14.7	6.3	15.8	6.8	16.3
45 to 54	65	35	30	287,837	135,895	151,942	22.6	25.8	19.7	17.1	28.1	17.2	34.3	12.7	26.8
55 to 64	142	70	72	168,721	78,536	90,185	84.2	89.1	79.8	70.3	98.0	68.3	110.0	61.4	98.3
65 to 74	197	85	112	105,627	46,350	59,277	186.5	183.4	188.9	160.5	212.5	144.4	222.4	154.0	223.9
75 to 84	185	80	105	60,380	23,176	37,204	306.4	345.2	282.2	262.2	350.5	269.5	420.8	228.2	336.2
85 & Older	89	30	59	18,268	5,491	12,777	487.2	546.3	461.8	386.0	588.4	350.8	741.9	343.9	579.6
Unknown	0	0	0												
Total	740	333	407	2,337,935	1,158,309	1,179,626	31.7	28.7	34.5	29.4	33.9	25.7	31.8	31.2	37.9
Age-Adjusted							46.5	50.0	44.3	43.1	50.0	44.3	55.7	40.0	48.6
HISPANIC															
Under 1	1	1	0	267,741	136,840	130,901	0.4 *	0.7 *	0.0 +	0.0	1.1	0.0	2.2	-	-
1 to 4	0	0	0	1,055,221	539,226	515,995	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	2,296,937	1,173,481	1,123,456	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	3	2	1	1,609,062	832,517	776,545	0.2 *	0.2 *	0.1 *	0.0	0.4	0.0	0.6	0.0	0.4
25 to 34	16	10	6	1,793,492	998,691	794,801	0.9 *	1.0 *	0.8 *	0.5	1.3	0.4	1.6	0.2	1.4
35 to 44	49	29	20	1,643,440	880,073	763,367	3.0	3.3	2.6	2.1	3.8	2.1	4.5	1.5	3.8
45 to 54	137	74	63	978,139	498,051	480,088	14.0	14.9	13.1	11.7	16.4	11.5	18.2	9.9	16.4
55 to 64	249	123	126	506,398	246,133	260,265	49.2	50.0	48.4	43.1	55.3	41.1	58.8	40.0	56.9
65 to 74	455	221	234	320,415	146,540	173,875	142.0	150.8	134.6	129.0	155.1	130.9	170.7	117.3	151.8
75 to 84	382	170	212	161,694	67,052	94,642	236.2	253.5	224.0	212.6	259.9	215.4	291.6	193.8	254.2
85 & Older	155	55	100	56,213	18,817	37,396	275.7	292.3	267.4	232.3	319.1	215.0	369.5	215.0	319.8
Unknown	0	0	0												
Total	1,447	685	762	10,688,752	5,537,421	5,151,331	13.5	12.4	14.8	12.8	14.2	11.4	13.3	13.7	15.8
Age-Adjusted							31.1	32.9	29.6	29.4	32.7	30.3	35.6	27.5	31.8
WHITE															
Under 1	0	0	0	184,301	94,292	90,009	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	1	1	0	755,674	387,114	368,560	0.1 *	0.3 *	0.0 +	0.0	0.4	0.0	0.8	-	-
5 to 14	4	3	1	2,195,503	1,128,544	1,066,959	0.2 *	0.3 *	0.1 *	0.0	0.4	0.0	0.6	0.0	0.3
15 to 24	7	6	1	2,044,992	1,064,819	980,173	0.3 *	0.6 *	0.1 *	0.1	0.6	0.1	1.0	0.0	0.3
25 to 34	22	13	9	2,203,062	1,129,676	1,073,386	1.0	1.2 *	0.8 *	0.6	1.4	0.5	1.8	0.3	1.4
35 to 44	111	68	43	3,021,139	1,533,742	1,487,397	3.7	4.4	2.9	3.0	4.4	3.4	5.5	2.0	3.8
45 to 54	237	136	101	2,641,894	1,321,810	1,320,084	9.0	10.3	7.7	7.8	10.1	8.6	12.0	6.2	9.1
55 to 64	387	209	178	1,763,963	867,898	896,065	21.9	24.1	19.9	19.8	24.1	20.8	27.3	16.9	22.8
65 to 74	785	396	389	1,314,382	612,887	701,495	59.7	64.6	55.5	55.5	63.9	58.2	71.0	49.9	61.0
75 to 84	1,245	635	610	959,473	390,540	568,933	129.8	162.6	107.2	122.6	137.0	149.9	175.2	98.7	115.7
85 & Older	707	269	438	337,128	101,760	235,368	209.7	264.3	186.1	194.3	225.2	232.8	295.9	168.7	203.5
Unknown	1	1	0												
Total	3,507	1,737	1,770	17,421,511	8,633,082	8,788,429	20.1	20.1	20.1	19.5	20.8	19.2	21.1	19.2	21.1
Age-Adjusted							17.0	20.2	14.7	16.4	17.5	19.2	21.1	14.0	15.4

Note : Rates are per 100,000 population. ICD-10 codes E10-E14.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
The race/ethnic groups in this table were tabulated using the first listed race when certificates included more than one race.

* Death rate unreliable, relative standard error is greater than or equal to 23%.
\+ Standard error indeterminate, death rate based on no (zero) deaths.
\- Confidence limit is not calculated for no (zero) deaths.

Source : State of California, Department of Finance; 2000 Population: Population Projections by Age, Race/Ethnicity and Sex, December 1998.
State of California, Department of Health Services, Death Records.

TABLE 2
DIABETES DEATHS
BY RACE/ETHNICITY, AGE, AND SEX
CALIFORNIA, 1999
(By Place of Residence)

AGE GROUPS	DEATHS			POPULATION			RATES			95% CONFIDENCE LIMITS					
										TOTAL		MALE		FEMALE	
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER
TOTAL															
Under 1	0	0	0	553,480	283,033	270,447	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	1	1	0	2,218,731	1,134,840	1,083,891	0.0 *	0.1 *	0.0 +	0.0	0.1	0.0	0.3	-	-
5 to 14	4	1	3	5,438,254	2,785,041	2,653,213	0.1 *	0.0 *	0.1 *	0.0	0.1	0.0	0.1	0.0	0.2
15 to 24	17	9	8	4,490,994	2,331,075	2,159,919	0.4 *	0.4 *	0.4 *	0.2	0.6	0.1	0.6	0.1	0.6
25 to 34	54	34	20	5,088,372	2,693,838	2,394,534	1.1	1.3	0.8	0.8	1.3	0.8	1.7	0.5	1.2
35 to 44	190	103	87	5,703,159	2,911,607	2,791,552	3.3	3.5	3.1	2.9	3.8	2.9	4.2	2.5	3.8
45 to 54	449	243	206	4,284,494	2,127,558	2,156,936	10.5	11.4	9.6	9.5	11.4	10.0	12.9	8.2	10.9
55 to 64	891	444	447	2,647,776	1,289,251	1,358,525	33.7	34.4	32.9	31.4	35.9	31.2	37.6	29.9	36.0
65 to 74	1,532	724	808	1,945,679	889,827	1,055,852	78.7	81.4	76.5	74.8	82.7	75.4	87.3	71.2	81.8
75 to 84	1,851	848	1,003	1,272,523	519,523	753,000	145.5	163.2	133.2	138.8	152.1	152.2	174.2	125.0	141.4
85 & Older	1,015	363	652	429,016	134,219	294,797	236.6	270.5	221.2	222.0	251.1	242.6	298.3	204.2	238.1
Unknown	0	0	0												
Total	6,004	2,770	3,234	34,072,478	17,099,812	16,972,666	17.6	16.2	19.1	17.2	18.1	15.6	16.8	18.4	19.7
Age-Adjusted							20.5	22.2	19.3	20.0	21.0	21.4	23.1	18.6	20.0
ASIAN/OTHER															
Under 1	0	0	0	65,732	33,636	32,096	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	260,730	133,774	126,956	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	637,566	327,540	310,026	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	2	0	2	584,065	299,316	284,749	0.3 *	0.0 +	0.7 *	0.0	0.8	-	-	0.0	1.7
25 to 34	2	2	0	635,628	321,836	313,792	0.3 *	0.6 *	0.0 +	0.0	0.8	0.0	1.5	-	-
35 to 44	10	4	6	685,240	331,715	353,525	1.5 *	1.2 *	1.7 *	0.6	2.4	0.0	2.4	0.3	3.1
45 to 54	26	8	18	528,902	250,278	278,624	4.9	3.2 *	6.5 *	3.0	6.8	1.0	5.4	3.5	9.4
55 to 64	73	36	37	300,304	142,774	157,530	24.3	25.2	23.5	18.7	29.9	17.0	33.5	15.9	31.1
65 to 74	152	68	84	209,410	91,786	117,624	72.6	74.1	71.4	61.0	84.1	56.5	91.7	56.1	86.7
75 to 84	182	88	94	116,337	50,337	66,000	156.4	174.8	142.4	133.7	179.2	138.3	211.3	113.6	171.2
85 & Older	92	43	49	35,195	15,278	19,917	261.4	281.5	246.0	208.0	314.8	197.3	365.6	177.1	314.9
Unknown	0	0	0												
Total	539	249	290	4,059,109	1,998,270	2,060,839	13.3	12.5	14.1	12.2	14.4	10.9	14.0	12.5	15.7
Age-Adjusted							19.0	20.0	18.2	17.3	20.6	17.5	22.5	16.1	20.3
BLACK															
Under 1	0	0	0	37,436	19,147	18,289	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	150,150	76,493	73,657	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	1	0	1	412,399	208,881	203,518	0.2 *	0.0 +	0.5 *	0.0	0.7	-	-	0.0	1.5
15 to 24	2	1	1	352,398	186,295	166,103	0.6 *	0.5 *	0.6 *	0.0	1.4	0.0	1.6	0.0	1.8
25 to 34	12	6	6	361,723	189,557	172,166	3.3 *	3.2 *	3.5 *	1.4	5.2	0.6	5.7	0.7	6.3
35 to 44	35	18	17	387,780	188,667	199,113	9.0	9.5 *	8.5 *	6.0	12.0	5.1	13.9	4.5	12.6
45 to 54	82	36	46	274,298	129,075	145,223	29.9	27.9	31.7	23.4	36.4	18.8	37.0	22.5	40.8
55 to 64	134	73	61	164,532	76,514	88,018	81.4	95.4	69.3	67.7	95.2	73.5	117.3	51.9	86.7
65 to 74	180	75	105	103,767	44,942	58,825	173.5	166.9	178.5	148.1	198.8	129.1	204.7	144.4	212.6
75 to 84	186	76	110	58,756	22,082	36,674	316.6	344.2	299.9	271.1	362.1	266.8	421.6	243.9	356.0
85 & Older	96	23	73	17,677	5,158	12,519	543.1	445.9	583.1	434.4	651.7	263.7	628.1	449.3	716.9
Unknown	0	0	0												
Total	728	308	420	2,320,916	1,146,811	1,174,105	31.4	26.9	35.8	29.1	33.6	23.9	29.9	32.4	39.2
Age-Adjusted							47.2	47.5	46.6	43.7	50.8	41.8	53.2	42.1	51.1
HISPANIC															
Under 1	0	0	0	263,940	134,897	129,043	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	1,043,348	532,534	510,814	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	3	1	2	2,187,045	1,117,326	1,069,719	0.1 *	0.1 *	0.2 *	0.0	0.3	0.0	0.3	0.0	0.4
15 to 24	5	3	2	1,555,795	803,837	751,958	0.3 *	0.4 *	0.3 *	0.0	0.6	0.0	0.8	0.0	0.6
25 to 34	10	6	4	1,812,547	1,014,469	798,078	0.6 *	0.6 *	0.5 *	0.2	0.9	0.1	1.1	0.0	1.0
35 to 44	38	23	15	1,581,171	842,312	738,859	2.4	2.7	2.0 *	1.6	3.2	1.6	3.8	1.0	3.1
45 to 54	119	75	44	912,180	462,923	449,257	13.0	16.2	9.8	10.7	15.4	12.5	19.9	6.9	12.7
55 to 64	275	119	156	481,158	233,374	247,784	57.2	51.0	63.0	50.4	63.9	41.8	60.2	53.1	72.8
65 to 74	433	185	248	309,686	140,820	168,866	139.8	131.4	146.9	126.6	153.0	112.4	150.3	128.6	165.1
75 to 84	356	147	209	152,091	62,846	89,245	234.1	233.9	234.2	209.8	258.4	196.1	271.7	202.4	265.9
85 & Older	167	59	108	53,802	18,170	35,632	310.4	324.7	303.1	263.3	357.5	241.9	407.6	245.9	360.3
Unknown	0	0	0												
Total	1,406	618	788	10,352,763	5,363,508	4,989,255	13.6	11.5	15.8	12.9	14.3	10.6	12.4	14.7	16.9
Age-Adjusted							31.8	31.4	32.2	30.1	33.5	28.8	34.1	29.9	34.5
WHITE															
Under 1	0	0	0	186,372	95,353	91,019	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	1	1	0	764,503	392,039	372,464	0.1 *	0.3 *	0.0 +	0.0	0.4	0.0	0.8	-	-
5 to 14	0	0	0	2,201,244	1,131,294	1,069,950	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	8	5	3	1,998,736	1,041,627	957,109	0.4 *	0.5 *	0.3 *	0.1	0.7	0.1	0.9	0.0	0.7
25 to 34	30	20	10	2,278,474	1,167,976	1,110,498	1.3	1.7	0.9 *	0.8	1.8	1.0	2.5	0.3	1.5
35 to 44	107	58	49	3,048,968	1,548,913	1,500,055	3.5	3.7	3.3	2.8	4.2	2.8	4.7	2.4	4.2
45 to 54	222	124	98	2,569,114	1,285,282	1,283,832	8.6	9.6	7.6	7.5	9.8	7.9	11.3	6.1	9.1
55 to 64	409	216	193	1,701,782	836,589	865,193	24.0	25.8	22.3	21.7	26.4	22.4	29.3	19.2	25.5
65 to 74	767	396	371	1,322,816	612,279	710,537	58.0	64.7	52.2	53.9	62.1	58.3	71.0	46.9	57.5
75 to 84	1,127	537	590	945,339	384,258	561,081	119.2	139.7	105.2	112.3	126.2	127.9	151.6	96.7	113.6
85 & Older	660	238	422	322,342	95,613	226,729	204.8	248.9	186.1	189.1	220.4	217.3	280.5	168.4	203.9
Unknown	0	0	0												
Total	3,331	1,595	1,736	17,339,690	8,591,223	8,748,467	19.2	18.6	19.8	18.6	19.9	17.7	19.5	18.9	20.8
Age-Adjusted							16.4	18.9	14.7	15.9	17.0	17.9	19.8	14.0	15.4

Note : Rates are per 100,000 population. ICD-10 codes E10-E14.
White, Black, and Asian/Other exclude Hispanic ethnicity.
Hispanic includes any race category.

* Death rate unreliable, relative standard error is greater than or equal to 23%.
\+ Standard error indeterminate, death rate based on no (zero) deaths.
\- Confidence limit is not calculated for no (zero) deaths.

Source : State of California, Department of Finance; 1999 Population: Population Projections by Age, Race/Ethnicity and Sex, December 1998.
State of California, Department of Health Services, Death Records.

TABLE 3
DIABETES DEATHS
CALIFORNIA, 1999-2000
(By Place of Residence)

COUNTY	1999-2000 DEATHS (Average)	PERCENT	1999 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS	
						LOWER	UPPER
CALIFORNIA	6,103.5	100.0	34,072,478	17.9	20.8	20.5	21.2
ALAMEDA	281.5	4.6	1,448,643	19.4	22.6	21.0	24.2
ALPINE	0.0	0.0	1,226	0.0 +	0.0 +	-	-
AMADOR	4.5	0.1	34,410	13.1 *	8.0 *	4.5	11.4
BUTTE	42.5	0.7	204,216	20.8	15.0	12.1	18.0
CALAVERAS	6.0	0.1	40,597	14.8 *	10.8 *	4.1	17.6
COLUSA	3.0	0.0 a	20,091	14.9 *	16.0 *	1.6	30.3
CONTRA COSTA	157.0	2.6	921,662	17.0	17.9	16.2	19.5
DEL NORTE	6.5	0.1	30,358	21.4 *	19.7 *	9.3	30.0
EL DORADO	28.0	0.5	156,996	17.8	17.7	13.5	21.9
FRESNO	191.0	3.1	800,121	23.9	29.4	26.9	32.0
GLENN	5.0	0.1	28,438	17.6 *	17.0 *	6.9	27.1
HUMBOLDT	33.0	0.5	127,658	25.9	26.2	20.1	32.3
IMPERIAL	25.0	0.4	150,381	16.6	21.5	16.1	26.9
INYO	4.0	0.1	18,348	21.8 *	14.5 *	5.6	23.4
KERN	125.0	2.0	662,472	18.9	22.8	20.1	25.6
KINGS	38.0	0.6	123,683	30.7	48.1	39.2	56.9
LAKE	19.0	0.3	58,335	32.6 *	19.6 *	13.7	25.6
LASSEN	4.0	0.1	35,208	11.4 *	13.1 *	5.5	20.8
LOS ANGELES	1,849.5	30.3	9,727,841	19.0	24.2	23.6	24.9
MADERA	31.5	0.5	121,779	25.9	27.8	21.2	34.5
MARIN	25.0	0.4	247,073	10.1	9.8	7.7	11.9
MARIPOSA	3.5	0.1	16,339	21.4 *	14.2 *	4.6	23.8
MENDOCINO	22.0	0.4	88,978	24.7	23.1	16.9	29.2
MERCED	50.5	0.8	210,707	24.0	32.4	27.1	37.8
MODOC	1.0	0.0 a	10,384	9.6 *	6.6 *	2.8	10.4
MONO	1.0	0.0 a	10,730	9.3 *	11.4 *	0.0	23.3
MONTEREY	63.0	1.0	395,133	15.9	20.0	17.0	23.0
NAPA	29.5	0.5	125,123	23.6	18.7	14.5	22.9
NEVADA	11.5	0.2	94,014	12.2 *	8.9 *	5.0	12.8
ORANGE	401.0	6.6	2,787,593	14.4	18.8	17.8	19.9
PLACER	34.0	0.6	233,836	14.5	15.0	12.1	18.0
PLUMAS	4.5	0.1	20,714	21.7 *	17.7 *	5.9	29.5
RIVERSIDE	238.5	3.9	1,519,469	15.7	15.7	14.3	17.1
SACRAMENTO	212.0	3.5	1,189,056	17.8	20.3	18.6	22.1
SAN BENITO	7.5	0.1	50,087	15.0 *	17.9 *	11.7	24.0
SAN BERNARDINO	367.0	6.0	1,688,984	21.7	30.5	28.5	32.5
SAN DIEGO	429.0	7.0	2,884,572	14.9	17.4	16.3	18.5
SAN FRANCISCO	128.5	2.1	788,975	16.3	13.7	12.2	15.3
SAN JOAQUIN	130.5	2.1	566,793	23.0	25.7	22.8	28.5
SAN LUIS OBISPO	40.5	0.7	247,880	16.3	14.7	11.5	18.0
SAN MATEO	106.5	1.7	735,381	14.5	14.3	12.7	16.0
SANTA BARBARA	62.0	1.0	408,292	15.2	15.7	13.2	18.2
SANTA CLARA	234.5	3.8	1,732,034	13.5	18.0	16.7	19.2
SANTA CRUZ	42.0	0.7	255,825	16.4	18.0	14.8	21.1
SHASTA	46.5	0.8	171,211	27.2	24.3	19.7	28.8
SIERRA	0.5	0.0 a	3,427	14.6 *	11.2 *	0.0	39.7
SISKIYOU	10.5	0.2	44,847	23.4 *	17.3 *	12.0	22.5
SOLANO	65.0	1.1	392,201	16.6	23.6	20.5	26.7
SONOMA	78.0	1.3	450,187	17.3	16.6	14.2	19.0
STANISLAUS	96.5	1.6	446,056	21.6	25.4	22.1	28.8
SUTTER	8.0	0.1	79,992	10.0 *	9.8 *	5.2	14.4
TEHAMA	21.0	0.3	55,806	37.6	28.4	21.7	35.2
TRINITY	4.5	0.1	13,353	33.7 *	27.7 *	7.3	48.2
TULARE	81.5	1.3	371,640	21.9	26.6	23.0	30.3
TUOLUMNE	9.0	0.1	54,631	16.5 *	12.7 *	7.0	18.5
VENTURA	139.5	2.3	744,825	18.7	22.7	20.6	24.8
YOLO	29.0	0.5	160,805	18.0	22.7	17.3	28.1
YUBA	15.0	0.2	63,062	23.8 *	28.8 *	18.7	38.9

Note : Rates are per 100,000 population. ICD-10 codes E10-E14.
The race/ethnic groups in this table were tabulated using the first listed race when certificates included more than one race.

* Death rate unreliable, relative standard error is greater than or equal to 23%.

a Represents a percentage of more than zero but less than 0.05.

\+ Standard error indeterminate, death rate based on no (zero) deaths.

\- Confidence limit is not calculated for no (zero) deaths.

Source : State of California, Department of Finance; 1999 Population: Population Projections by Age, Race/Ethnicity and Sex, December 1998.
State of California, Department of Health Services, Death Records.